Schedule

DC2 kickoff
mid-Jan (TBD)

Catalog/quicklook
analysis

Test, ingest into data servers*, Test
(~21 days)

Science Tools*
IRF visualisation
sensitivity estimator

IRFs
(1 month)

Generate Sky Data, SC data
interleave bkg, root->fits
(~21 days)

Documentation

Sky Model*

Orbit, SAA*

Event classification
bkg rej., energy recon
(2.5 months)

Nov 14

Aug 31

Gen bkg/allgamma dataset
(30 days – start July 31)

Recon improvements
Cal TDS rewrite etc.

Onboard filter

Background model

dev develop background
interleave method
Next Major Milestone – July 31

- Begin generating the all-gamma and background datasets.
- Things that will be frozen (for DC2) at this time include:
  - Background model
  - OnBoard filter
  - Realistic instrument model (dead strips, variable LAC thresholds etc)
  - Recon improvements
Background Rejection Prep Work (Ritz)

• Plan two stages: 100M event run(s) then full DC2 background run (~1B events)
• 100M event generation for first new background studies: prior to pushing the button (in two weeks?) want
  - geometry final checks (TKR, ACD, CAL, NAD)
  - physics final checks (MS, step sizes)
  - background fluxes (agree and document, see Toby’s talk)
    • not include heavy ions? check processing times.
    • include albedo gammas in 100M run; for DC2 background runs, plan to do a separate set of runs (attitude dependent)
      - propose just do few orbits and then replay those events
  - hardware trigger checks (mainly CAL & vetoes)
  - onboard filter (agree on the selection bits)
  - bad channel lists
    • no bad channels for ACD&CAL; for TKR suggest we do
      - 0.1% random single channels plus 0.5% “blotches” of 4-200 strips. [For DC2, we’ll have the REAL LIST!]
  - zero suppression and noise checks
    - propose that, for DC2, we raise the CAL zero-suppression threshold back to 2 MeV. We have a trade: event rate to the ground vs CAL zero-suppression threshold (mainly affects energy resolution at low energy).
  - check ACD efficiencies (run 10M muons through center of one tile as an end-to-end check)
• generation plan TBR in 2 weeks (after Bill has a chance to look at current tuples). One (or two?) 100M event runs, then the big DC2 run according to Julie’s schedule.
Background analysis prep continued (Ritz)

- **What we keep:**
  - use the Onboard Filter, run in passthru mode so we have all the status bits
  - for background events (including gamma albedo), for large majority of runs, if filter rejects event don't run recon and don’t write out events. for a small subset of runs (<x2 final sample increase), run recon and write out events as a check.
  - for all_gammar events, run recon and write out ALL events.

- **For support of the analysis need**
  - recons checked
  - tuple check (floats), document
  - demonstrate ability to reprocess all or subset of events
  - peeling eventlists, event display of these events
  - classification tree infrastructure comparisons and operating plan
DC2 Software Workshop (June 27-29)

The presentations can be found at:

Status of instrument performance studies:
This involves the analysis to reconstruct the direction and energy of events and the development of cuts/weights to select well-reconstructed photon events for high level science analyses.

- Review/status of reconstruction and low level analysis, input fluxes for the background model.
- Some sample background and gamma-ray datasets using the new recon. code was produced for this meeting.
- Discussed several implementations of a background rejection and event classification analysis (this is what is used to select `good` photon events.
- First preliminary studies of instrument performance with the new datasets.

Most importantly, it is clear that work in this area has begun in earnest, and a clear plan and schedule for how to proceed has been formed.
Instrument Response Functions

(The functions/data which describe things like effective area and psf as a function of energy)

- Extensive discussions on how these should be parameterised, and on what features (of the parameterisation) are optimal/necessary for use in the sciencetools.

- Discussed how to test/verify the accuracy with which the IRFs parameterisations describe the performance of the instrument.

- Available tools/methods to access and visualise the IRFs, either to study their properties or to use them to perform sensitivity/source detectability studies.

We can't start producing detailed IRFs, or decide how many event classes are necessary until the event classification analysis is complete. However, it is probably useful to develop methods to easily produce/fit IRFs parameters fairly soon.
Sky Model/Source Simulations

Review of the status of astrophysical source simulation capability.

We currently have sufficiently detailed implementation for all the major source classes that we can meet the minimal DC2 goals (this does not mean that we will not continue to refine and add details or use a better version of something should it become available)

Still a lot of work remains to pull everything together into a single coherent sky model.
Science Tools and Data servers

Reviewed the simulated data types that will be released for DC2 and described the server that users will use to access this data.

Reviewed the status and open issues with the science analysis tools and also discussed details of user support issues (installers/documentation etc).

Discussed the plans and priority for the work to be done in these areas between now and the DC2 kickoff next January.
Summary

Overall the meeting was fairly successful.

Much work was done in preparation for the meeting.

We have a much clearer picture of the current status of DC2 preparations.

... and a clearer sense of what we need to do (and by when) to be ready in time for the January kickoff.